

What is claimed:

- 1 1. A method of serializing software objects, comprising steps of:  
2 creating, for an object to be serialized to a persistent store, a graph structure comprising  
3 nodes that embody serializable attributes and values thereof; and  
4 writing the graph structure to the persistent store as a markup language document.
- 1 2. The method according to Claim 1, wherein the markup language document is encoded in  
2 Extensible Markup Language (“XML”) notation.
- 1 3. The method according to Claim 1, wherein the nodes are written as markup language  
2 elements in the markup language document.
- 1 4. The method according to Claim 1, wherein the nodes reflect a structure of the object  
2 according to one or more class definitions to which the object adheres.
- 1 5. The method according to Claim 4, wherein the structure of the object is reflected in  
2 hierarchical relationships among markup language elements of the markup language document.
- 1 6. The method according to Claim 5, wherein the attribute values are reflected in attributes  
2 of the markup language elements.
- 1 7. The method according to Claim 1, further comprising the step of deserializing a new

instance of the object from the markup language document.

8. The method according to Claim 7, wherein:

the markup language document reflects one or more original class definitions to which the object adhered when the creating and writing steps were performed; and

the deserializing step further comprises the steps of:

creating a second graph structure from the markup language document;

programmatically determining whether serializable attribute definitions for one or more current class definitions to which the new instance adheres are identical to the serializable attribute definitions for the original class definitions, as reflected in the second graph structure, and if not, performing a programmatic migration of the attribute values in the second graph structure; and

deserializing the new instance from the serializable attributes and values embodied in the second graph structure.

9. A method of enabling serialized objects to be preserved following changes to one or more class definitions used in those objects, comprising steps of:

creating, for an object to be serialized to a persistent store, a graph structure comprising nodes that embody a structure of the object and values of serializable attributes of the object;

writing the graph structure to the persistent store, such that serializable information from one or more original class definitions to which the object adheres is persistently captured;

programmatically determining, in order to deserialize the persistently captured information

8 to a new instance of the object, whether serializable attribute definitions for the original class  
9 definitions, as reflected in the graph structure, are identical to serializable attribute definitions of  
10 one or more current class definitions to which the new instance must adhere; and

11 deserializing the new instance of the object directly from the serializable information  
12 persistently captured within the graph structure, if the programmatically determining step has a  
13 positive result, and performing a programmatic migration of the attribute values from the  
14 serializable information persistently captured with the graph structure otherwise.

1 10. The method according to Claim 9, wherein the writing step further comprises writing the  
2 graph structure to the persistent store as a markup language document.

1 11. The method according to Claim 9, wherein the step of performing the programmatic  
2 migration further comprises the step of directly accessing individual attribute values from the  
3 persistently-captured serializable information.

1 12. The method according to Claim 11, wherein the directly accessing step does not require  
2 access to a programming language specification of the one or more original class definitions.

1 13. A method of deserializing software objects, comprising steps of:  
2 creating, from a markup language document written to a persistent store, a corresponding  
3 graph structure, wherein elements of the markup language document and nodes of the  
4 corresponding graph structure embody serializable attributes and values of an object and wherein

5 the markup language document reflects one or more original class definitions to which the object  
6 adhered when the markup language document was created; and  
7 deserializing a new instance of the object from the graph structure.

1 14. The method according to Claim 13, wherein the deserializing step further comprises the  
2 steps of:

3 programmatically determining whether serializable attribute definitions for one or more  
4 current class definitions to which the new instance adheres are identical to the serializable  
5 attribute definitions for the original class definitions, as reflected in the graph structure, and if not,  
6 performing a programmatic migration of the attribute values in the graph structure; and

7 deserializing the new instance from the serializable attributes and values embodied in the  
8 graph structure.

1 15. A data structure for enabling serialized objects to be preserved following changes to one  
2 or more class definitions used in those objects, the data structure embodied on a computer-  
3 readable medium and comprising a specification of a structure of an object according to one or  
4 more class definitions to which the object adheres and values of serializable attributes of the  
5 object, according to the one or more class definitions, such that the data structure is usable for  
6 deserializing a new instance of the object according to one or more current class definitions to  
7 which the new instance must adhere.

1 16. The data structure according to Claim 15, wherein the specification comprises a markup

2 language document representation.

1 17. A system for serializing software objects, comprising:

2 means for creating, for an object to be serialized to a persistent store, a graph structure  
3 comprising nodes that embody serializable attributes and values thereof; and

4 means for writing the graph structure to the persistent store as a markup language  
5 document.

1 18. A computer program product for deserializing software objects, the computer program  
2 product embodied on one or more computer-readable media and comprising:

3 computer-readable program code means for creating, from a markup language document  
4 written to a persistent store, a corresponding graph structure, wherein elements of the markup  
5 language document and nodes of the corresponding graph structure embody serializable attributes  
6 and values of an object and wherein the markup language document reflects one or more original  
7 class definitions to which the object adhered when the markup language document was created;  
8 and

9 computer-readable program code means for deserializing a new instance of the object  
10 from the graph structure.